

**REMARKS**

The present invention relates to a non-woven fabric composed of a three-layered structure comprising an internal layer containing heat-bondable synthetic fibers and pulp fibers, and surface layers containing heat-bondable synthetic fibers, wherein the internal layer is sandwiched and is united by heat bonding.

This Amendment, filed in response to the Non-Final Office Action dated January 4, 2008, is believed to be fully responsive to the rejections raised therein. Accordingly, favorable reconsideration on the merits is respectfully submitted to be proper.

In the present Amendment, claim 1 has been amended to recite that the polymers constituting the internal layer portion of the fibers comprise polyethylene/polypropylene and/or polyethylene/polyester; and that the polymers constituting the surface layer portion of the fibers comprise polyethylene/polyester.

No new matter has been added. Support for the amendment can be found in the specification, e.g., page 5, lines 18-26. Entry of the Amendment is respectfully submitted to be proper. Upon entry of the amendment, claim 1 is the only pending claim in the application.

Claim 1 was rejected under 35 U.S.C. § 103(a) as being unpatentable over WO 00/38565 ("Amundson") in view of, U.S. Patent 6,278,037 ("Schmidt"). Particularly, the Office Action asserted that Amundson teaches a composite laminate comprising two outer polyethylene layers bonded to an inner polypropylene layer, wherein the inner layer may further comprise a blend of synthetic and natural fibers. It was asserted further that Amundson further teaches that the individual layers may be attached by a thermo-mechanical process, such as heat rollers.

The Examiner conceded that Amundson fails to teach the biocomponent fibers recited in the present claim, but it was asserted that such fibers are well known in the art. Further to this point, it was asserted that Schmidt teaches absorbent articles comprising polypropylene/polyester or polyethylene/polyester having a length ranging from 0.3-7.5 cm and a fineness ranging from 0.4 to 20 dtex.

It was further asserted that one having ordinary skill in the art at the time the invention was made would have been motivated to form the composite article of Amundson with the biocomponent fibers as taught by Schmidt, such motivation being derived from the desire to provide a composite disposable article having thermal bonding abilities.

The Examiner also admitted that the combination of Amundson and Schmidt fail to teach the claimed ratio of the lengthwise and crosswise direction strength, the ratio of the strength in a dry state to that of a wet state and the water absorption properties. However, it was asserted that the disposable absorbent article provided by the combination of Amundson and Schmidt would exhibit the claimed ratios once the disposable absorbent composite is provided.

Applicant respectfully traverses and requests reconsideration and withdrawal of the rejection of claim 1 herein in view of the following remarks.

Claim 1 as amended recites a dry-process nonwoven pulp fabric, composed of united layer structures,

which comprises an internal layer portion in which heat-bondable synthetic fibers wherein a combination of polymer is polyethylene/polypropylene and/or polyethylene/polyester, and pulp fibers are mixed at a ratio of 20/80 to 60/40% by

weight and the synthetic fibers and/or the synthetic fibers and pulp fibers are heat bonded to one another and which has a basis weight of 8 to 240 g/m<sup>2</sup>,

and surface layer portions between which the internal layer portion is sandwiched, which contain heat-bondable synthetic conjugate fibers wherein a combination of polymer is polyethylene/polyester and the synthetic conjugate fibers are heat bonded to one another and which has a basis weight (METSUKE) of the range from more than 5 g/m<sup>2</sup> to 12 g/m<sup>2</sup>,

wherein the internal layer portion and the surface layer portion are united as a whole by heat bonding of the synthetic conjugate fibers to one another, the ratio of a strength in a lengthwise direction to that in a crosswise direction is from 0.8 to 1.2 in both dry and wet states, the ratio of a strength in a dry state to that in a wet state is from 0.6 to 1.1, the water absorption is from 8 to 20 g/g, and the total basis weight is from 20 to 250 g/m<sup>2</sup>, and

wherein the heat-bondable synthetic (conjugate) fiber has the length from 1 to 15 mm and the fineness from 0.5 dt to 50 dt.

Applicant respectfully submits that claim 1 is patentable over Admunson and Schmidt. The prior art documents alone or in combination do not teach, suggest, motivate or provide any apparent reason to modify or combine the documents to arrive at the subject matter of the present claim, wherein a dry-process non-woven pulp fabric composed of united layer structures comprises polyethylene/polyester in the surface layer and polyethene/polypropylene and/or polyethylene/polyester in the internal layer portion. The surface layer portion is strengthened (against wiping) by using polyethylene/polyester synthetic conjugate fibers in the surface layer portion. Additionally, as for both the internal layer portions and the surface layer portions,

polyethylene polymer constitutes the sheath part of synthetic conjugate fiber. Therefore, both layers can be heat-bonded to each other easily and sufficiently at low temperatures. These features bring increasing strength and unity of the layer structures, and are important advantages of the present invention.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the local Washington, D.C. telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.


Respectfully submitted,

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